

ABSTRACT

The present invention provides an apparatus and method for nucleotide or DNA sequencing by monitoring the molecular charge configuration as the DNA moves through a protein that is capable of transcribing the DNA. The apparatus and method provides a nanoscale electrometer that immobilizes the protein. The protein receives the DNA and transcribes the DNA. The nanoscale electrometer is a sensitive device that is capable of sensing and measuring the electronic charge that is released during the transcription process. The apparatus and method of the present invention further provides monitoring means that are attached to the nanoscale electrometer to monitor the electronic charge configuration as the DNA moves through the protein. Once the electronic charge configuration is established, a correlation is computed, using computing means, between the electronic charge configuration and a nucleotide signature of the DNA.